

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A method of forming a film comprising HfO_2 on a substrate, the method comprising:

providing a plurality of substrates, each having a diameter greater than about 195 mm,
on respective surfaces of a tier substrate holder in a process chamber of a batch type
processing system;

maintaining the process chamber at a pressure of between 0.05 Torr and about 2 Torr;

heating the substrates to a temperature of between 100° C and 600° C approximately
~~180EC, said temperature being selected to improve uniformity of processing among the~~
~~plurality of substrates;~~

flowing a pulse of a hafnium-containing precursor in the process chamber by flowing
a hafnium-containing precursor liquid into a vaporizer at a flow rate of between 0.05 ccm
(cubic centimeters per minute) and 1 ccm, the hafnium-containing precursor comprising
 $\text{Hf}(\text{NEt}_2)_4$, $\text{Hf}(\text{NEtMe})_4$, or a combination thereof;

flowing a pulse of a reactant gas in the process chamber at a flow rate of between 100
sccm and 2000 sccm; and

repeating the flowing processes until a ~~film comprising HfO_2~~ film with desired film
properties is formed on the substrates having acceptably constant properties across all
substrates of the plurality of substrates in the tier substrate holder.

Claims 2-3 (Canceled).

Claim 4 (Original): The method according to claim 1, further comprising flowing a
purge gas in the process chamber.

Claim 5 (Original): The method according to claim 4, wherein the flowing a purge gas comprises flowing a flow rate between about 100sccm and about 10,000sccm.

Claim 6 (Original): The method according to claim 1, further comprising flowing a pulse of a purge gas in the process chamber when the metal-containing precursor and the reactant gas are not flowing.

Claim 7 (Original): The method according to claim 6, wherein the flowing a pulse of a purge gas comprises flowing a pulse duration between about 1sec to about 500sec.

Claim 8 (Currently Amended): The method according to claim 1, wherein the flowing a pulse of a hafnium-containing precursor comprises flowing ~~[[a]]~~ the hafnium-containing precursor and a carrier gas.

Claim 9 (Original): The method according to claim 8, wherein the flowing a carrier gas comprises a flow rate between about 100sccm and about 10,000sccm.

Claim 10 (Original): The method according to claim 1, wherein the flowing a pulse of a reactant gas comprises flowing a reactant gas and a carrier gas.

Claim 11 (Original): The method according to claim 1, wherein the flowing a pulse of a reactant gas comprises flowing at least one of an oxidizing gas, a reducing gas, and an inert gas.

Claim 12 (Original): The method according to claim 11, wherein the flowing a pulse of an oxidizing gas comprises flowing an oxygen-containing gas.

Claim 13 (Original): The method according to claim 12, wherein the flowing a pulse of an oxygen-containing gas comprises flowing at least one of O₂, O₃, H₂O₂, H₂O, NO, N₂O, and NO₂.

Claims 14-19 (Canceled).

Claim 20 (Original): The method according to claim 1, wherein the providing comprises providing at least one of a semiconductor substrate, a LCD substrate, and a glass substrate.

Claim 21 (Original): The method according to claim 20, wherein the providing comprises providing a Si substrate or a compound semiconductor substrate.

Claim 22 (Original): The method according to claim 1, wherein the providing comprises providing a substrate containing an interfacial film selected from an oxide film, a nitride film, an oxynitride film, or mixtures thereof.

Claim 23 (Original): The method according to claim 1, wherein the providing comprises providing a batch of about 100 substrates or less.

Claim 24 (Canceled)

Claim 25 (Previously Presented): The method according to claim 1, wherein the flowing a pulse of a hafnium-containing precursor comprises flowing a pulse duration between about 1sec and about 500sec.

Claim 26 (Original): The method according to claim 1, wherein the flowing a pulse of a reactant gas comprises flowing a pulse duration between about 1sec and about 500sec.

Claims 27-29 (Canceled).

Claim 30-32 (Canceled)

Claim 33 (Original): The method according to claim 1, further comprising providing a process chamber pressure of about 0.3Torr.

Claim 34 (Currently Amended): The method according to claim 1, wherein the repeating comprises forming a ~~film comprising~~ HfO_2 film and having a film thickness less than about 1000Å.

Claim 35 (Currently Amended): The method according to claim 1, wherein the repeating comprises forming a ~~film comprising~~ HfO_2 film and having a film thickness less than about 200Å.

Claim 36 (Currently Amended): The method according to claim 1, wherein the repeating comprises forming a ~~film comprising~~ HfO_2 film and having a film thickness less than about 50Å.

Claim 37 (Previously Presented): The method according to claim 1, further comprising annealing the film comprising HfO_2 at a temperature between about 150°C and about 1000°C.

Claim 38 (Original): The method according to claim 1, further comprising depositing an electrode film comprising at least one of W, Al, TaN, TaSiN, HfN, HfSiN, TiN, TiSiN, Re, Ru, Si, poly-Si, and SiGe.

Claims 39-51 (Canceled).

Claim 52 (Previously Presented): The method according to claim 1, wherein the heating comprises heating the plurality of substrates under isothermal heating conditions.

Claims 53-64 (Canceled).

Claim 65 (Withdrawn): A computer readable medium containing program instructions for execution on a processor, which when executed by the processor, cause a batch substrate processing apparatus to perform the steps in the method recited in claim 1.

Claims 66-82 (Canceled).

Claim 83 (New): The method of claim 1, wherein the HfO_2 film is a stoichiometric film.

Claim 84 (New): The method of claim 1, wherein the HfO_2 film is a non-stoichiometric film.